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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,532	01/22/2002	Geun Su Lee	30205/38083	5968

4743 7590 09/26/2003

MARSHALL, GERSTEIN & BORUN LLP
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CHICAGO, IL 60606

EXAMINER

THORNTON, YVETTE C

ART UNIT	PAPER NUMBER
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1752

DATE MAILED: 09/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicant(s)

10/054,532

Applicant(s)

LEE ET AL.

Examiner

Yvette C. Thornton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 8-15 and 22-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7 is/are rejected.
- 7) ☒ Claim(s) 6 and 16-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This is written in reference to application number 10/054532 filed on January 22, 2002 and published as US 2003/0022100 A1 on January 30, 2003.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Election/Restrictions

2. Claims 8-15 and 22-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 4.
3. Applicant's election with traverse of group I, claims 1-7 and 16-21 in Paper No. 4 is acknowledged. The traversal is on the ground(s) that all groups of claims are inextricably linked by either claim limitations or direct reference to claims of the other groups and that the groups are so closely related that a proper search of group I would inevitably cover groups II-IV. This is not found persuasive because while a complete search of the claimed product would include a determination of whether the claimed composition has been previously used or made, it does not limit the examiner to any given method of making or method of using as set forth in the non-elected groups. The examiner reserves the right to rejoin the process claims if the product claims as found to be allowable. Groups I-III each have acquired separate status in the art as shown by their different classification, restriction for examination purposes as indicated in Paper No. 3 is proper.

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4. The requirement is still deemed proper and is therefore made FINAL.
5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Interpretation

6. Claim 3 as written does not require the present of components "b" and/or "c" (i.e., $b=0, c=0$). Therefore, it is the examiner's interpretation that the limitations of instant claims 4-5 and 7 are met by any homopolymer or copolymer comprising of claimed formula (1). Furthermore, the comprising language of the claim does not prohibit the presence of additional monomer units.

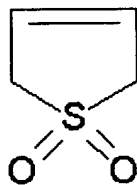
Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 1 is rejected under 35 U.S.C. 102(b) based upon a public use or sale of the



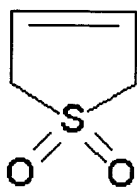
invention. Butadiene sulfone

is readily available for purchase from the Sigma-

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Aldrich catalog (2000-2001) under the product number B8,450-5. See also www.aldrich.com.

9. Claims 1-5 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Nachbur et al. (US 3449302 A). Nachbur teaches a copolymer obtained by copolymerizing vinylidenechloride, butadienesulphone, an ethylenically unsaturated film-forming monomer and an ethylenically unsaturated hydrophilic monomer. Butadienesulphone has the structure



Specifically Nachbur claims a copolymer composed 84% vinylidenechloride, 2% butadienesulfone, 8% methyl acrylate and 1% acrylic acid (cl. 5).

Allowable Subject Matter

10. Claims 6 and 16-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: review of the prior art failed to teach and/or suggest a polymer comprising a repeating unit of claimed formula (1) further comprising a monomer of formula (4) as set forth in instant claim 6. The prior art also failed to teach and /or suggest a photoresist composition comprising a photoresist monomer of claimed formula (1); an organic solvent and a photoacid generator as set forth in instant claims 16-21.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Davies et al. (US 5922518 A) pertaining to X-ray lithographic resists.
- Hergenrother et al. (US 4182837 A) pertaining to polyphosphazene copolymers containing sulfone substituents.
- Wilson et al. (GB 1057664 A) pertaining to the isomerisation of 2,5-dihydrothiophene-1,1-dioxides.
- Minoura et al. "Polymerization of Butadiene Sulfone", *Journal of Polymer Science Part A-1*, Vol. 4, 2929-2944 (1966).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvette C. Thornton whose telephone number is 703-305-0589. The examiner can normally be reached on Monday-Thursday 8-6:30.

14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet C. Baxter can be reached on 703-308-2303. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

15. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1495.


Yvette Clarke Thornton
Junior Examiner
Art Unit 1752

yct
September 13, 2003